

WHAT IS CLAIMED IS:

1. A connector device for providing a flowpath for flowable material between a source container with a destination container, said connector device comprising:
 - a first connector having a flow valve that is positionable between a normally-closed position and an open position, a housing, a first flowpath, and a flow-valve actuation assembly;
 - a second connector having a second flowpath;
 - a disconnect-prevention means; and
 - a connector device housing;

wherein said first connector is attachable to said source container and said second connector is removably connectable to said first connector so as to connect said first flowpath with said second flowpath to form a continuous flowpath;

wherein said flow valve is a normally-closed flow valve that interrupts flow from said first container into said first flowpath until said flow valve is moved to said open position;

wherein said disconnect-prevention means includes a first disconnect-prevention means on said first connector and a second disconnect-prevention means on said second connector and wherein, when said second connector is connected with said first connector and said flow-valve is in said open position, said first disconnect-prevention means prevents said second connector from being moved into a disconnect position.
2. The connector device of claim 1, wherein said flow-valve actuation assembly comprises a flow-valve actuation means, an actuation-control means, and a control-means safety mechanism, wherein said flow-valve actuation means is movable between a first position in which said flow valve is in said open position and a second position in which said flow valve is in said normally-closed position by said actuation-control means, and wherein said control-means safety mechanism secures said actuation

control means against accidental movement into said first position or into second position.

3. The connector device of claim 2, wherein said connector-device housing includes an actuation-assembly housing;

wherein said flow-valve actuation means is a shaft fixedly connected to said flow valve, said actuation control-means is a lever fixedly attached at one end to said shaft, and said flow valve is movable between said normally-closed position and said open position by moving said lever so as to rotate said shaft;

wherein said control-means safety mechanism includes a limit-motion slot provided in said actuation-assembly housing, a safety bar, and a biasing spring, said limit-motion slot having a first edge and said lever extending through said limit-motion slot;

wherein said biasing spring is assembled on said shaft and provides a biasing force that urges said lever against said first edge of said limit-motion edge;

wherein said safety bar has a length, a thickness, a first side and a second side, said safety bar extending from said housing at said first edge into said limit-motion slot, thereby forming a valve-open slot position on said first side and a valve-closed slot position on said second side;

wherein said length of said safety bar is sufficient to prevent said lever from moving between said valve-open slot position and said valve-closed slot position without providing an external force to overcome said biasing force, and said limit-motion slot has a width that is at least as wide as said length plus said thickness of said safety bar; and

wherein said lever is movable between said valve-open slot position and said valve-closed slot position in said limit-motion slot by applying said external force to said lever in a direction opposite to said biasing force and simultaneously sliding said lever past said safety bar.

4. The connector device of claim 3, wherein said first connector has a first inflow side and a first outflow side and a first mating assembly mounted on said housing at said first outflow side, and said second connector has a second inflow side and a second outflow side and a second mating assembly formed on said second inflow side, wherein said first mating assembly mates with said second mating assembly to form a leak-tight and secure connection between said first connector and said second connector.

5. The connector device of claim 4, wherein said first mating assembly comprises a first outflow opening and a tab and said second mating assembly comprises a second inflow opening that is sealably mateable with said first outflow opening and a flanged recess, and wherein said second connector is connectable with said first connector by mating said second inflow opening with said first outflow opening and rotating said second connector relative to said first connector so as to move said tab into said flanged recess.

6. The connector device of claim 5, wherein said tab of said first mating surface includes two tabs extending opposite one another forming a planar surface about said first outflow opening;

wherein said flanged recess of said second mating surface includes two flanged recesses, flange ends of said two flanged recesses defining an initial receiving space and recess ends of said two flanged recesses defining a locking receiving space, wherein, when said second connector is connectable with said first connector by mating said second inflow opening with said first outflow opening with said tabs received in said initial receiving space and rotating said second connector relative to said first connector so as to move said tabs into said locking receiving space.

7. The connector device of claim 5, wherein said tab includes a plurality of tabs and said flanged recess includes a plurality of recesses that corresponds in number with that of said plurality of tabs.

8. The connector device of claim 5, wherein said disconnect-prevention means comprises an interference between a first interference surface on said first connector and a second interference surface on said second connector such that said disconnect-prevention means prevents a rotation of said second connector relative to said first connector sufficient to disconnect said second connector from said first connector when said flow-valve is in said open position.

9. The connector device of claim 8, wherein said lever of said flow-valve actuation-assembly provides said first interference surface and said second mating surface provides said second interference surface, and wherein, when said lever is in said open-valve position, said lever prevents said second connector from being rotated relative to said first connector sufficient to disconnect said second connector from said first connector.

10. The connector device of claim 1, wherein said first connector has a first mating assembly with a first mating outflow opening on said outflow side and said second connector consists of a connector block having a second mating assembly with a second mating inflow opening, and a second outflow opening, wherein said second mating assembly is connectable with said first mating assembly.

11. The connector device of claim 1, wherein said first connector housing is a sealed housing that encloses said flow valve and said actuation shaft and is unopenable without destroying said first connector.